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ABSTRACT

Compared were the academic and social growth of 31 educable mentally retarded (EMR) students (7 to 14 years-old) who were either retained in special classes (N=14) or reintegrated into regular classes (N=7) with additional support from a learning center. Ss were studied at three time intervals: prior to assignment, 2 months after assignment, and at the conclusion of the school year. Results indicated that there were no significant differences between the reintegrated and segregated EMR Ss after 2 months, but that reintegrated Ss were more internally controlled, had more positive attitudes toward school, and were more reflective in their behavior after one school year. (LH)

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A COMPARISON OF EMR CHILDREN IN SPECIAL CLASSES WITH EMR CHILDREN WHO HAVE BEEN REINTEGRATED INTO REGULAR CLASSES

Abstract

In order to compare the academic and social growth of EMR children in regular classes, special class students were randomly assigned to regular classes (N = 17) or retained in special class (N = 14) and studied at three time intervals: prior to, two months after assignment, and at the conclusion of the school year. There were no significant differences between the reintegrated and segregated children after two months. After one school year, the reintegrated children were more internally controlled, had more positive attitudes toward school, and were more reflective in their behavior. The hypothesis that more able students by the learning potential (LP) criterion would benefit from regular and special class placements was partially supported. The high able (LP) children expressed more positive feelings and behaved more reflectively in the integrated placement. The high able (LP) students performed more competently cognitively than the low LP students.

A COMPARISON OF EMR CHILDREN IN SPECIAL CLASSES WITH EMR CHILDREN WHO HAVE BEEN REINTEGRATED INTO REGULAR CLASSES[1]

Milton Budoff and Jay Gottlieb

Considerable attention has been directed recently toward the inadequacies of special classes as a primary educational system for educable mentally retarded (EMR) children (Budoff, 1972; Christoplos & Renz, 1969; Dunn, 1968; Lilly, 1970; MacMillan, 1972). Dissatisfaction with segregated facilities for mildly retarded children has occurred for a variety of reasons. First, the efficacy studies have failed to demonstrate that special classes provide a superior education than regular grade placement for these children. Second, there has been an increasing concern with the effects of labeling and, concomitantly, with the misclassification of children from low income and/or minority group backgrounds as mentally retarded. Concurrently, the school's increased capability to deliver individualized programs for children with special needs, coupled with its socializing value as a source of normalizing experiences, has resulted in a rapid move away from the special classes in favor of integrated educational placements as a primary delivery system for special education services. Many school administrators have abandoned their special class programs and replaced them with resource rooms, learning centers, itinerant tutors, diagnostic-prescriptive teachers, etc. Children are being removed from segregated classes and placed into regular grades, most often with specialized educational support. However, there is relatively little evidence available to attest to the effects of <u>reintegrating</u> EMR children

into regular classes after they have spent one or more years in a special class.

At issue in studies of reintegration is what advantages may accrue to the segregated EMR child who has spent one or more years in a special class and is now in regular classes. The efficacy studies are not relevant in considering these questions because they compared EMR children enrolled in special classes with those retained in the regular grades. Studies that demonstrate the desirability of reintegration must compare samples of special class EMR children who have been reintegrated with those retained in special classes. Children who have been identified and placed in special classes are likely to differ from children who had never been identified and placed (Kirk, 1964).

Although there are several reasons to anticipate that removing a child from a special class and placing him back into a regular class would be viewed by him as a positive experience (i.e., he is no longer labeled and no longer looked at as "different"), there is also the possibility that reintegration might be viewed with alarm by the special class child. First, he is entering a class much like the one where he originally failed. He may question his ability to succeed now, since he was unable to do so in the past (Folman & Budoff, 1971). Second, he is entering a new class where he, and perhaps one other child, are the only pupils who have had a prior history of special class placement. As Edgerton (1967) has indicated, these persons expend considerable energy attempting to cloak their past history of retardation. The reintegrated EMR child may also spend much energy attempting to conceal his past special class status. Finally, the special class child may find his need for approval (MacMillan, 1972)

thwarted by his regular classmates, who do not accept him socially (Gottlieb & Budoff, 1973), and by his teachers, whose attitudes toward him are likely to become less favorable with continued contact (Alper & Retish, 1972; Shotel, Iano, & McGettigan, 1972).

The efficacy studies evaluated the effects of maintenance in regular classes versus special class placement by focusing primarily on academic achievement, though variables related to social adjustment were addressed usually by a general measure of personality and social acceptance. Walker (1972) reported significant achievement and adjustment differences in favor of pupils in the resource room program in contrast to control students. Rodee (1971), on the other hand, failed to observe significant differences in achievement or behavior among EMR pupils assigned to resource rooms, special classes or regular classes.

A recent series of studies has systematically examined areas in which the effects of reintegration might be evident. Following the contact hypothesis, Goodman, Gottlieb, and Harrison (1972) hypothesized that attitudes of normal children toward the reintegrated children would be more favorable because they were better known than the special class students to their normal classmates. The data, however, did not support the contact hypothesis. No differences in the social acceptance of integrated and segregated retarded children were observed. In fact, male raters judged the integrated children as less acceptable than the segregated children. Gottlieb and Davis (1973) studied the social position of the same integrated and segregated EMR children in an overt behavioral (play) situation. A regular class child had to select a partner for a beanbag game from a pair consisting of a regular class and an IQ-defined EMR child.

Of 28 possible choices, 27 regular class children were selected as partners, regardless of whether the EMR child was in the segregated class or had been integrated. The results indicated a pervasive nonacceptance of the special education student, whether integrated or segregated, in this achievement-oriented situation. Gottlieb and Budoff (1973) replicated the Goodman et al. study with a larger sample of children in a rural town. The results supported the Goodman et al. study and indicated that integrated children tended to be accepted less often than segregated ones. Integrating special class children into regular classes did not improve their social acceptability to nonretarded children.

A second area of inquiry was related to the classroom behaviors of the integrated and segregated students. Given that the integrated EMR children's regular class peers tend not to accept them, the investigators were concerned with examining whether they exhibited behaviors that might warrant this rejection. A series of classroom observation studies was initiated to examine this question.

Gampel, Harrison and Budoff (1972) observed the structured classroom behaviors of segregated and reintegrated EMR and regular class children in the same suburban school in which the Goodman et al. study was conducted. The question was whether the reintegrated special class children engage in particular kinds of behaviors which single them out as being "different," and result in their social nonacceptance. Factor analysis of the twelve rated behaviors indicated different patterns of classroom behaviors for the integrated and segregated EMRs, and regular class children. One factor identified with the segregated special class EMR students included a low incidence of self-stimulation and restlessness

and a high incidence of negative verbal interactions with their classmates, physical awkwardness, and aggressive acts. The other two factors characterized the behaviors of subsets of regular class children. One factor described some children who showed a higher level of aggressive interaction, low levels of attention and a high degree of variability. The second factor included two types of desirable behaviors--low distraction and high positive verbal interactions. The integrated children were described less by an identifiable pattern of their own than by the absence of a pattern. Plots of the verbal interaction data indicated the integrated children tended to avoid interactions, especially with their regular classmates. It may be that they avoided engaging in active behaviors which would draw attention to them. This tends to protect them from critical reaction, but is educationally nonprofitable, and personally restricting.

Gampel, Gottlieb, and Harrison (1974) compared reintegrated and segregated special class children, children with IQs in the retarded range who had never been identified as mentally retarded (low IQ), and intellectually average children; on the same behavior schedule. The observations were made two months after all the students began attending the same newly opened school. Segregated special class children manifested significantly higher incidences of negative behaviors than children reintegrated for two months. The classroom behaviors of the reintegrated EMR children did not differ from the low IQ and intellectually average groups.

Observations on the same schedule conducted at the conclusion of that school year indicated the major continuing difference between the segregated and reintegrated students was the increasing incidence of prosocial classroom behaviors displayed by the reintegrated students (Gottlieb,

Gampel, & Budoff, in press).

Reintegrated special class EMRs also expressed more positive attitudes toward school than those retained in the special class. These attitudes tend to be similar to those expressed by their regular class peers (Gottlieb & Budoff, 1972).

The first purpose of this paper is to report additional longitudinal data relevant to the effects of the reintegration of special class children when contrasted to continued placement in the segregated class. Data were collected at three points in time: during the spring prior to placement when all the students were in special classes, and two months and eight months following the assignment to a newly opened school when the students were randomly assigned to the integrated or segregated placement. In this paper, data relevant to the domains of achievement, motivation, cognitive style, and teacher perception of children will be reported.

While it is necessary to ascertain the effectiveness of integrated and segregated class placements, it is not sufficient. Of parallel concern is the ability to specify characteristics of children that would render them likely to succeed or not to succeed in a particular class placement. Since it is likely that a single educational program is not appropriate for all children (Adamson, & Van Etten, 1972), it becomes imperative to identify a child's abilities that may be related to his success in a particular school program.

One aptitude variable that may help to identify the degree to which a child is likely to succeed in an integrated educational placement is

his learning potential status (Budoff, 1967). Learning potential represents an alternative assessment strategy to the IQ score as a basis on which to categorize children as mentally retarded. Unlike the IQ test which primarily assesses the extent to which a child has spontaneously acquired knowledge and school-related proficiencies from his natural environment, the learning potential approach provides the child with experiences appropriate to the solution of the task and assesses the degree to which he is able to utilize the experiences in nontrained instances of the problem-solving task. Learning potential assessment replaces the traditional test with a three-stage procedure which includes a pretest, a training session in which appropriate problem-solving experiences are provided to the child, and a posttest. The posttraining score is an optimized indicator of the low income child's ability to reason (Babad & Budoff, 1974). Budoff, Meskin, and Harrison (1971) have shown that differences in response to the LP task may define an IQ-defined EMR's educability. High able students, by the LP criterion, learned and applied principles of electricity taught in a "hands on" model as well as nonretarded and regular class students, while the less able (LP) students who did not become more proficient on the reasoning problems after training also did not profit from the instruction conducted over thirteen weeks. Unlike any other group, their post-teaching scores were similar to those of the non-taught controls.

The hypothesis that can be derived from learning potential (LP) assessment is that IQ-defined EMR students who demonstrate proficiency on a reasoning task after problem-relevant training should also benefit from an integrated, academically oriented, regular class curriculum when they

are provided with appropriate support. Children who do not improve in posttest performance even after the problem relevant training may function as mentally retarded students in that they tend to profit to a minimal degree from conceptual learning under optimized conditions and may be best served in segregated rather than regular classes.

Method

Subjects

Thirty-one children between the ages of 93 and 168 months participated as subjects in this experiment. The children had all attended segregated special classes in one of three inner-city schools for at least one year prior to their participation in the study. Subjects were attending schools that were scheduled to be demolished at the end of the 1970-1971 academic year. They were to be assigned to two special classes that were being formed in a newly opened school which enrolled all the students of the three older schools. For purposes of this research, 14 subjects were assigned to one segregated class while the remaining 17 were integrated full-time into the general education program of the school with additional support from a learning center. Assignment to the segregated class or learning center program was made on a random basis after Ss had been stratified according to whether they resided in other neighborhoods and were bussed to school, or whether they lived in the school zone and attended their regular neighborhood school. This procedure was employed because prior data indicated the possibility of EMR children's social acceptance being influenced by the community in which they lived, and whether they were bussed to school (Goodman, Gottlieb, & Harrison, 1972). Two subjects in each of the two groups were bussed to school from out-of-district

locations.

The mean CA was 138.0 months (SD 15.50) for the integrated group and 139.07 months (±18.32) for the segregated group. Nine of the integrated subjects were male as were seven of the segregated group. The integrated group had a mean IQ (WISC) of 70.41 (± 6.01) and the segregated group a mean IQ of 70.14 (± 9.15). One integrated and two segregated children were black. One integrated child was from a middle class background. The remainder were from homes where the father was either an unskilled or a semi-skilled laborer or was not present in the household. After administration of the learning potential assessment, seven and eight high able students and ten and six low able students were assigned to the integrated and segregated treatments, respectively.

The Remedial Learning Center

The experimental treatment to which the reintegrated subjects were exposed was a remedial learning center (RLC). The RLC consisted of a double sized classroom staffed by three teachers--one experienced teacher and two first year teachers--which accommodated approximately 20 children at a time. During its first year of operation, with which the present data are concerned, the RLC functioned as an educational system designed exclusively to help children in educational need. Each session of 20 children contained no more than one third of the former special class students. The remainder were regular class children referred by their classroom teachers because they needed special educational help, either remedial or enrichment, or because they could serve as tutors to the mentally retarded children. Subjects attended the RLC for approximately 40 minutes per day, five days a week, although some former special class students

spent larger portions of each day there depending on their educational needs.

The RLC was organized as a series of activity stations within the classroom, with each sector devoted to mathematics, reading, etc. The major instructional emphases were on mathematics and social-emotional development. Mathematics lessons concentrated on improving the subjects' understanding of numbers and numerical operations through the use of manipulative materials. The teachers also helped the children with the problems the former special class children encountered in their new regular class placement. The teachers counseled them on appropriate ways to behave, some of the problems they would encounter, e.g., social rejection by their peers, and ways to overcome the problems. Although specific children were not assigned to one of the three teachers, children tended to attach themselves to the teacher they perceived as most sympathetic to them.

The Special Class

The 14 control group children attended a segregated special class for the entire school day. The special classroom was located on a ground floor location physically separate from the academic classroom areas but adjacent to the shop and homemaking classrooms. They interacted with the other children in the school only during the lunch period. The special class children were taught by a full-time experienced special education teacher with the assistance of a student teacher in order to maximize the likelihood that the experimental and control group children would have equal access to teachers. In addition, another experienced special education teacher worked with half the class for one hour each day in the school shop. The student-teacher ratio in both treatment conditions was approximately 7:1.

Procedures

Learning potential status was determined during the spring data collection prior to placement. All students were individually administered Sets A, AB, B of the Raven Progressive Matrices (1956) on the day prior to and the day following completion of training, which consisted of up to one hour's duration, in individual sessions. A training booklet which contained nontest problems dealing with pattern completion, orientation of elements within a pattern, and double classification problems was distributed to each child. The trainer reviewed the problems in the training booklet with each child.

During development of the training procedure for the double classification problems, it was found that children could easily derive one attribute at a time, but often did not hold the first attribute in mind while they derived the second relevant attribute. The child's understanding was facilitated by having him draw the relevant attributes, one at a time as he derived them. This procedure helped concretize the elements of the solution process so that many children, after this type of practice, could do the double classification problems mentally with very little trouble. In this training procedure, the students were required to draw in the missing element for the design before they looked at the six choices presented on the lower half of the page. The requirements of each problem type were presented in meaningful designs initially, e.g., an American flag with a piece missing, and then a geometric form to attune the child to the basic format of the Matrices test problems. Individual children were called to indicate the correct choice, and to give reasons for their choice. A slide with the answer included allowed them to compare their

choice and to correct it, if necessary.

High able students by the learning potential criterion are those students whose posttraining score approximates a 90 IQ (i.e., 2/3 standard deviation for the score corresponding to the 50th percentile at the child's chronological age), regardless of pretraining level. Low able students were those whose pre- and posttraining score did not attain the score equivalent to a 90 IQ.

Dependant measures

All Ss were tested either individually or in groups of 2 or 3, in a small room located in a quiet area of the school. Ss were tested three times on most instruments. The first round of data was collected during the late spring of the school year prior to Ss' enrollment in their new school and while they were all attending special classes (Time 1). The second round of data was collected six weeks to two months after Ss were enrolled in the new school and assigned to experimental or control group treatments (Time 2). Final data collection occurred during late May, 1972, near the conclusion of the first integrated school year (Time 3).

Measures were selected which represented four behavioral domains: achievement, motivation, cognitive style, and teachers' perceptions of behavior. Not all instruments were administered at three points in time. Time pressures during the first and third data collections prevented several instruments from being administered, as indicated below. The following instruments, grouped by domain, were administered to all subjects:

1. Achievement

The Metropolitan Achievement Test was administered to all subjects. A reading standard score was obtained from the paragraph meaning subtest,

and the arithmetic achievement standard score was derived from the arithmetic computations subtest. The Primary II level was administered to most Ss, with repeated testing on three occasions, employing parallel forms of the test.

2. Motivation

School Morale Scale. A 24-item instrument measuring attitudes toward school was administered to all Ss at the three points in time. This instrument, a modification of Wrightsman's School Morale Scale, has an internal reliability of .71 and has consistently indicated differences in attitudes between children attending special classes and those who were reintegrated into regular classes (Gottlieb & Budoff, 1972).

Academic Self-Concept. This instrument was developed from factor analysis of the Laurelton Self-Concept Scale (Harrison & Budoff, 1972a, 1972b). Twenty-eight items whose factor structure correlated with academic achievement were retained to comprise this instrument. This scale was administered three times.

Projected Self-Concept. A 60-item scale was developed for this research, which measures the way children think about themselves (48 items) and how they think other children perceive them (12 items); this was administered twice, at the second and third data collection rounds. The instrument was scored as the percentage of responses in the high self-concept direction relative to the total number of items to which the subject responded.

Locus of Control. A 30-item questionnaire was administered each item of which required the subject to pretend that something had just happened to him. S was asked to choose one of two options to explain why

the hypothetical event occurred. One option always presented the subject as controlling the situation, while the second option involved an external source controlling the event. The instrument was scored in the internal direction, with a high score indicating a child who perceives himself as in control. The locus of control instrument was developed by Project Prime (Kaufman, Semmel, & Agard, 1973) and was administered only during the third data collection round.

Picture Motivator Scale. This scale is a 20-item forced choice measure of a student's motivational orientation, either intrinsic or extrinsic. Each of the items consists of a pair of activities from which the student is to choose the one which he would most like to do. Each pair includes one activity which typifies an intrinsic behavior, while the other shows an extrinsically oriented behavior. Haywood (1968) indicated that high scoring "motivator-oriented" individuals respond to intrinsic, self-actualizing factors, e.g., a need for achievement responsibility in the successful performance of tasks. The low scoring "hygiene-oriented" individual is motivated by extrinsic environmental factors. He sees his principal satisfactions in the ease and comfort of the environment, has strong seeds for security, and avoids effortful task participation. This instrument was administerd at all three times.

Anxiety Level. Sarason's (1964) 24-item Children's Test Anxiety Scale was used to measure children's level of anxiety, and was administered only during the second point in time.

Defensive Scale for Children (DSC). A 40-item instrument, including lie scale and warm-up items, developed by Ruebush (1960), the scale measures "the tendency to deny the experience of negative feelings

such as anxiety, hostility, inadequacy, etc." (Sarason, Hill, & Zimbardo, 1964, p. 7). This instrument was administered together with the Anxiety Scale.

3. Cognitive Style

Reflectivity and Impulsivity. Kagan's (1965) 12-item Matching Familiar Figures (MFF) Test, designed to measure the child's level of reflectivity or impulsivity, was administered three times. Two scores were computed: number correct and latency.

Level of Aspiration. This variable was assessed by asking the subject to indicate how many X's he could write in a given period of time. Each subject was first allowed one minute to complete as many rows of 20 X's as he could (standard condition). He was then asked to estimate how many rows he thought he would complete during the next attempt. After writing his answer, S was given 45 seconds to complete the rows (failure condition). Finally, S was again asked to indicate the number of rows he thought he would complete and was given 75 seconds to do so (success condition). A subject's score was the discrepancy between the number of rows he indicated that he could complete and the number he actually did complete. A discrepancy score was calculated for the standard, failure and success conditions. The level of aspiration measure was administered only during the second data collection.

4. Teacher's Behavior Rating Form

A 13-item Likert format questionnaire developed by Coopersmith (1967) in which the teacher indicates the extent to which the child engages in behavior that may be interpreted as representing a high degree of social adjustment. Coopersmith interpreted this measure to be an overt behavioral

index of the child's self-concept.

Design

The data were analyzed in three phases, corresponding to the three data collection points (Times 1, 2, and 3). The analysis on Time 1 measures assessed the pre-treatment equivalence of the experimental and control groups. A multivariate analysis of variance was conducted on the dependent measures collected prior to group assignment (Time 1): Matching Familiar Figures (number correct, latency), teacher's behavior ratings, reading and arithmetic achievement, academic self-concept, school morale, and Picture Motivator scores.

The measures collected following assignment (Times 2 and 3) were grouped into four variable domains and separate analyses of covariance were performed on each domain at each of the two points of time. A multivariate analysis of covariance was performed on the dependent measures in each of three variable domains: (1) achievement (reading and arithmetic), (2) motivation (school morale, academic self-concept, projected self-concept, locus of control, Picture Motivator, anxiety*, success*, and failure conditions*), (3) cognitive style - Matching Familiar Figures - number correct and mean latency, and Level of Aspiration measures. A univariate analysis of covariance was performed on (4) teacher's behavioral ratings. In each analysis, covariates were scores on the Time 1 measures in each domain that corresponded to the Time 2 and Time 3 dependent measures, and factors were Placement (integrated versus segregated) and Learning Potential (LP) status (high able versus low able).

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*Administered only at Time 2

Results

The multivariate analysis of the preassignment data indicated that integrated and segregated students did not significantly differ on the Time 1 measures; however, a significant effect was found for learning potential (LP) ($F = 2.48$, $df = 9/20$, $p < .05$). Inspection of the univariate analyses on the eight dependent variables indicated that LP was statistically significant on three Time 1 measures: MFF correct ($p < .01$), reading ($p < .01$), and arithmetic achievement ($p < .05$). As indicated in Table 1, the high able students by the LP criterion scored higher than the low able students on these measures. The multivariate LP X Placement effect was not significant, indicating that there was no difference by LP status between integrated and segregated students on the preassignment measures.

Insert Table 1 about here

Analyses of the Time 2 scores, covaried by Time 1 scores, revealed a significant multivariate effect of LP in both the achievement and cognitive style domains ($F = 3.45$, $df = 2/24$, $p < .05$ and $F = 3.12$, $df = 5.21$, $p < .05$, respectively). High able (LP) students scored higher than low able students in both domains, with significant univariate F-ratios obtained on arithmetic achievement ($p < .05$), and on MFF correct and MFF latency in the cognitive style domain ($p < .01$). There were no significant multivariate effects in the remaining two domains.

Analysis of data collected at the end of one school year (Time 3) indicated significant multivariate effects in the achievement, motivation and cognitive style domains. The multivariate effect of LP was significant

TABLE 1

Means and Standard Deviations for Variable Domains

Domain	LP status		Placement status					
			Integrated			Segregated		
			T1	T2	T3	T1	T2	T3
Achievement								
Reading	high	$\bar{X}$	41.00	39.71	45.43	43.62	38.62	46.88
		SD	3.46	5.28	4.32	6.61	11.39	7.81
		Adj. $\bar{X}$	---	---	45.64	---	---	46.18
	low	$\bar{X}$	34.30	35.10	38.60	37.83	34.00	42.00
		SD	7.69	6.15	2.84	9.72	8.41	4.10
		Adj. $\bar{X}$	---	---	38.95	---	---	42.09
Math	high	$\bar{X}$	47.71	50.00	53.29	40.25	49.25	47.25
		SD	6.87	5.26	8.06	9.92	8.81	9.35
		Adj. $\bar{X}$	---	47.11	---	---	49.31	---
	low	$\bar{X}$	36.10	39.70	43.10	39.50	40.33	43.83
		SD	7.11	8.27	9.41	7.40	8.36	12.48
		Adj. $\bar{X}$	---	41.44	---	---	40.72	---
Motivation								
School morale	high	$\bar{X}$	11.43	14.57	17.00	13.38	12.25	10.00
		SD	4.32	2.76	2.16	5.63	1.49	3.82
		Adj. $\bar{X}$	---	---	17.01	---	---	9.51
	low	$\bar{X}$	10.10	13.80	15.70	8.50	11.33	10.50
		SD	4.38	5.49	3.20	2.59	1.37	5.50
		Adj. $\bar{X}$	---	---	15.78	---	---	11.02
Academic self-concept	high	$\bar{X}$	18.14	17.71	19.43	16.12	19.62	12.25
		SD	5.55	6.13	5.74	5.22	4.07	7.05
		Adj. $\bar{X}$	---	---	18.22	---	---	12.28

TABLE 1 (continued)

Domain	LP status		Placement status					
			Integrated			Segregated		
			T1	T2	T3	T1	T2	T3
	low	$\bar{X}$	17.60	16.60	19.30	17.17	17.50	18.17
		SD	3.13	6.54	6.00	6.14	5.65	6.46
		Adj. $\bar{X}$	---	---	19.50	---	---	19.20
Projected self-	high	$\bar{X}$	---	.69	.75	---	.50	.58
concept		SD	---	.16	.11	---	.17	.17
		Adj. $\bar{X}$	---	---	.73	---	---	.55
	low	$\bar{X}$	---	.51	.62	---	.51	.75
		SD	---	.14	.14	---	.18	.07
		Adj. $\bar{X}$	---	---	.64	---	---	.79
Locus of control	high	$\bar{X}$	---	---	18.57	---	---	16.25
		SD	---	---	2.30	---	---	3.01
		Adj. $\bar{X}$	---	---	19.17	---	---	16.13
	low	X	---	---	16.20	---	---	14.33
		SD	---	---	4.24	---	---	1.37
		Adj. $\bar{X}$	---	---	16.04	---	---	14.06
Picture motivator	high	$\bar{X}$	7.14	6.43	8.57	5.00	4.12	7.00
		SD	3.76	2.44	2.57	2.45	2.30	3.42
		Adj. $\bar{X}$	---	---	---	---	---	---
	low	$\bar{X}$	5.40	5.20	5.60	5.83	5.50	6.33
		SD	2.59	1.93	2.17	3.43	4.09	4.97
		Adj. $\bar{X}$	---	---	---	---	---	---
Anxiety level	high	$\bar{X}$	---	10.29	---	---	12.62	---
		SD	---	6.37	---	---	7.96	---
		Adj. $\bar{X}$	---	---	---	---	---	---

TABLE 1 (continued)

Domain	LP status		Placement status					
			Integrated			Segregated		
			T1	T2	T3	T1	T2	T3
	low	$\bar{X}$	---	---	14.10	---	---	13.83
		SD	---	---	8.76	---	---	6.37
		Adj. $\bar{X}$	---	---	---	---	---	---
Defensive scale	high	$\bar{X}$	---	13.57	---	---	18.00	---
for children		SD	---	6.75	---	---	7.25	---
		Adj. $\bar{X}$	---	---	---	---	---	---
	low	$\bar{X}$	---	15.80	---	---	15.33	---
		SD	---	6.92	---	---	3.08	---
		Adj. $\bar{X}$	---	---	---	---	---	---
Cognitive style								
Reflectivity-	high	$\bar{X}$	5.86	6.71	8.43	5.50	6.38	5.12
impulsivity:		SD	2.12	2.43	1.81	1.41	1.92	1.73
MFF score		Adj. $\bar{X}$	---	6.74	8.36	---	6.26	4.94
	low	$\bar{X}$	3.90	4.00	3.80	4.17	4.50	4.50
		SD	1.60	1.63	1.03	1.72	2.34	3.15
		Adj. $\bar{X}$	---	4.43	4.37	---	3.90	3.88
Reflectivity-	high	$\bar{X}$	12.29	21.19	18.94	15.09	16.66	14.38
impulsivity:		SD	4.51	10.67	8.79	6.10	5.67	5.09
latency		Adj. $\bar{X}$	---	23.17	19.33	---	16.73	13.71
	low	$\bar{X}$	10.04	9.86	11.76	25.20	19.23	14.53
		SD	6.92	5.67	6.02	29.69	19.85	15.39
		Adj. $\bar{X}$	---	12.56	14.67	---	12.33	10.11
Level of aspi-	high	$\bar{X}$	---	1.10	---	---	.67	---
ration:		SD	---	1.61	---	---	.44	---

TABLE 1 (continued)

Domain	LP status		Placement status					
			Integrated			Segregated		
			T1	T2	T3	T1	T2	T3
standard		Adj. $\bar{X}$	---	---	---	---	---	---
	low	$\bar{X}$	---	.73	---	---	1.22	---
		SD	---	.78	---	---	1.05	---
		Adj. $\bar{X}$	---	---	---	---	---	---
Level of aspi-	high	$\bar{X}$	---	.66	---	---	.75	---
ration:		SD	---	.95	---	---	.50	---
failure		Adj. $\bar{X}$	---	---	---	---	---	---
	low	$\bar{X}$	---	.98	---	---	1.08	---
		SD	---	1.01	---	---	1.02	---
		Adj. $\bar{X}$	---	---	---	---	---	---
Level of aspi-	high	$\bar{X}$	---	2.50	---	---	2.38	---
ration:		SD	---	1.48	---	---	2.31	---
success		Adj. $\bar{X}$	---	---	---	---	---	---
	low	$\bar{X}$	---	1.78	---	---	1.29	---
		SD	---	1.17	---	---	.91	---
		Adj. $\bar{X}$	---	---	---	---	---	---
Teachers' behavior	high	$\bar{X}$	40.86	---	---	42.62	---	---
rating		SD	4.60	---	---	6.23	---	---
		Adj. $\bar{X}$	---	---	---	---	---	---
	low	$\bar{X}$	37.30	---	---	38.67	---	---
		SD	7.15	---	---	5.89	---	---
		Adj. $\bar{X}$	---	---	---	---	---	---

on scores in the achievement domain ($F = 3.93$, $df = 2/24$, $p < .05$). Without regard to placement, high able students achieved more than low able students, especially on the reading test ($p < .01$) and less consistently on arithmetic computation ($p = .17$).

The multivariate analysis performed on the motivation variables revealed two significant effects: Placement ($F = 6.38$, $df = 5/20$, $p < .001$) and LP X Placement interaction ($F = 3.28$, $df = 5/20$, $p < .05$). Examination of the five univariate analyses revealed that integrated and segregated children differed significantly on two measures, locus of control ($p < .05$), and school morale ($p < .001$), with a marginal trend on the academic self-concept measure ($p < .10$). The adjusted means on these variables indicated that integrated children were more internally controlled, expressed more favorable attitudes toward school, and regarded themselves more positively as students than the segregated students.

The LP X Placement interaction was significant in the univariate analysis on the projected self-concept ($p < .001$) and marginally so, on the academic self-concept ($p = .15$) measures. The high able students in the integrated placement attributed more positive attitudes toward themselves by others and tended to regard themselves more favorably as students than did high able students in the segregated placement. Low able students in the segregated placement attributed more positive attitudes toward themselves than the low able students in the integrated class. An interesting, though nonsignificant interaction, was that the high able (LP) students

in the special class expressed markedly fewer positive attitudes toward school than their integrated peers (adjusted means of 9.5 versus 17.0 for the two groups, respectively).

Multivariate analysis on the cognitive style variables (MFF number correct and latency) indicated that integrated students exhibited more reflective behavior than the segregated special class students at the close of the school year (Placement multivariate effect: $F = 5.23$, $df = 2/24$, $p < .01$). Significant multivariate effects were obtained for LP ($F = 7.10$, $df = 2/24$, $p < .01$) and the LP X Placement interaction ($F = 4.62$, $df = 2/24$, $p < .05$). Adjusted means on MFF correct indicated that regardless of placement, high able students performed better than low able students ($p < .001$). This trend was stronger for children in integrated than segregated placement ($p < .05$). Integrated high able students displayed more reflective behavior than the segregated high able students, while the reflective behavior of low able students did not markedly differ in the two placements.

No main effects or interactions were found to be significant in the analysis of covariance on teachers' behavior ratings at Time 3.

Discussion

This study examined the effects over a broad range of variable domains of the reintegration of special class EMR children into the mainstream of the school during the course of one academic year. Measurements were obtained prior to the new placement, and two months and eight months after the assignment to the special or regular class placement in a newly opened school building.

Prior to and two months after integration, there were no significant

differences between the special class students placed in the integrated and segregated settings, only differences relating to LP status. Some discussions of the stigmatizing effects of the label "mentally retarded" imply that simply removing the label by mainstreaming the child should alter the child's perception of his status, and presumably, influence positively his attitudinal responses and his behaviors. If this were the case, differences in the attitudinal variables between the integrated and segregated special class children should have been apparent by two months following placement. All the students had entered a new school building from three smaller schools, and the teaching staff had been recruited from more than twenty schools within the city. Further, the principal had deliberately sought to mask the identities of the former special class students by trying to keep the teachers unaware of the previous placement of the experimental sample. Thus, the ex-special class student's "reputation" tended not to accompany him into the new school. Mere placement of the students in a mainstreamed program and removal of the manifest evidence of the formal designation "mentally retarded," however, did not substantially alter the responses or behaviors of the integrated students after this short period of time.

The situation in this study is different from the usual circumstances in which mainstreamed programs are developed. More typically, the special class within a school is simply disbanded, the children dispersed among several classes within the same school, and the special classroom renamed a "resource room." The delabeled children are sent to the same teacher for only selected portions of the school day. Simply delabeling under these circumstances is even less likely than the circumstances of the

present investigation to produce substantive changes in the ex-special class student's achievement, perceptions of himself, others, or school, or in his behaviors in school, because the child's previous placement is known to the other students and the school faculty. Also, contrary to the expectation that simply delabeling the child will result in more positive attitudes and behaviors, anecdotal reports of teachers and project staff early in the school year indicated that the reintegrated students tended to withdraw and isolate themselves or to act in unusual ways toward their classmates, as if to test the limits of their acceptability, and possibly, to act out their personal sense of discomfort.

Major positive effects of the integrated placement were evident by the close of the school year in this context, when the ex-special class student was provided with active educational and emotional support. In contrast to the segregated students, the integrated students showed marked differences in scores in the motivation and cognitive style variable domains. Examination of the means of the separate measures in the motivation domain after one school year indicates that the integrated students felt more positively about their prospects in school, expressed an increased sense of control vis-a-vis their environment, and tended to view their own capability as students more positively than when they were still in special class. Integrated children also displayed more reflective behavior than the segregated pupils.

This finding differs from those reported by many efficacy studies which state that the social and personal adjustment of special class children is superior to that reported by EMRs retained in the regular classes. The findings of the efficacy studies are limited, however, by the fact that

the reference group to which the IQ-defined EMRs are responding differs for the two groups. The special class students are expressing feelings of greater ease and comfort in reference to their special classmates. By contrast, the reference group of those retained in the regular classes is their nonEMR classmates. Folman and Budoff (1971) have shown that when the special class students are asked about their feelings of comfort, they express a marked sense of discomfort toward regular class students, but feel at ease with and even superior to their special classmates. In the present study the integrated ex-special class students expressed greater feelings of comfort with regular classmates by the close of the first year. Gottlieb, Gampel, and Budoff (in press) found a greater incidence of prosocial classroom behaviors, and a decrease in physically aggressive classroom behaviors by integrated children in contrast to their segregated peers, demonstrating that the integrated children used the opportunities of the mainstreamed program constructively. However, after one school year, they were experiencing strain and discomfort, as was evidenced by the greater incidence of verbally aggressive behaviors than was displayed by their regular classmates. If one interprets the motivation and cognitive style domains and the supporting evidence from the Gottlieb, et al. study as representing aspects of the adjustment process, these findings provide evidence of an on-going process of adjustment that is positive in its basic thrust. Anecdotal support for this conclusion was provided by some re-integrated children who spontaneously thanked the project staff for removing them from the special class.

The reintegrated students experience certain persisting problems, however. Gottlieb and Budoff (1973) have indicated that they are not socially accepted

by their regular class peers, even after considerable periods in the mainstream of the school. Teachers have supported this finding anecdotally by indicating that ex-special class students tend to be individually isolated in free play situations. While this first year appears to be viewed as a year of opportunity, we must be alerted to the possibility that the positive attitudes and classroom behaviors may not persist if the ex-special class child continues to feel isolated from his peers and re-experiences his sense of incompetence in school. Considerable energy must be focused on helping the child find ways that allow him to see his own positive progress in school, and on research to understand how these children's social acceptance in their peer society can be enhanced.

The hypothesis that response to learning potential training does provide evidence of a more general problem-solving capability was supported by the differences evident among the special class samples during the data collection prior to and one year after placement in the new school. At both points, more able students by the learning potential criterion had higher achievement scores and demonstrated more reflective behavior than their low able (LP) classmates.

More critically for this study, there is evidence in support of the predicted attitude by treatment interaction. After one year in the integrated placement, the more able students, as defined by their response to the LP training, benefited more than the low able students from the integrated placement. The more able (LP) students felt that others regarded them more positively when they were mainstreamed than when they were segregated, while the least able (LP) special class students reported

others' attitudes toward them were more favorable when they were in the segregated condition. These results, which provide further validating evidence for the utility of the test-train-test learning potential assessment procedure, are particularly significant because they predicted outcomes in two different educational treatments.

Special classes are composed of students with diverse educational and personal needs who have been grouped in the past largely by a scholastic aptitude score (IQ) (Smith, 1974). The IQ has been strongly criticized as a discriminatory instrument when used with children from culturally different backgrounds, e.g., low income and/or minority group backgrounds. Yet special classes for the EMR are disproportionately populated with children from these backgrounds. The studies which examined the efficacy of special class placement for IQ-defined EMRs often reported that those maintained in the regular classes without special help had higher levels of academic achievement that those assigned to special classes. These findings are suspect because large numbers of the students in both the regular and special class placements must have been from low income homes. A significant proportion were undoubtedly more capable than their low IQ scores indicated (Budoff & Corman, 1974). The findings of this study indicate that the more able (LP) student placed in the special class felt oppressed by the placement as indicated by the low self-esteem and poor attitudes toward school he expressed. If one posits that children who regard their school experience positively will be more effective learners over the multi-year period of the efficacy studies, (e.g., Goldstein, Moss, & Jordan, 1965), the more able students in the special class tended not to learn as effectively as those

maintained in the regular classes, resulting in the finding of low achievement scores. The educational effectiveness of the special class may have been blunted by the social ascription of stigma from nonEMR peers experienced by more able students assigned by the IQ criterion. This may be the reason why Goldstein, et al. (1965) found that higher IQ children (>80) performed better academically in the regular than the special classes, while those EMR children whose IQ scores were below 80 did better in the special class.

What is required are more defined conceptions of the goals of the different educational treatments available which would suggest more effective criteria by which to assign slow learning students to special educational placements. Without these criteria, assignment of children to the most effective educational setting for them will continue to be difficult. Learning potential assessment, by focusing on the capability of low school achieving students to profit from training experiences on critical skills, e.g, abstract reasoning processes, did differentiate among these students in regard to response to two different special educational settings within the one year of the intervention.

A persisting dilemma in these results involves the failure to find differences in academic achievement between the two placements after one school year. Response to LP assessment was associated with differences in this domain, particularly with regard to reading, but the main effect for placement and the predicted interaction on achievement were not significant. Several reasons can be suggested. One year may simply not be sufficient time in which to expect dramatic changes in scholastic achievement, since students in the integrated setting may expend

considerable energy testing the new environment and trying to discover their personal strengths in this new and probably anxiety-laden world in which they did fail at least once before. Some evidence that a longer time is required is indicated by recent findings in an evaluation of the second year following reintegration of special class students. Gottlieb (1974) showed that when appropriate educational support was provided, there were substantial increments in reading and math scores during this second post integration year, although the first year's scores showed no such change. The integrated former special class students gained an average of nearly one full year in reading and math scores.

There are also social system variables that may deter the initial achievements of these students in a school that had previously segregated its EMR students. When interviewed at the end of the school year, both experienced special and regular education teachers, without exception, indicated that the children fared better socially in the integrated setting. In the academic area, some teachers stated that they perceived little difference in the performance of these students in special or regular classes. Others indicated that they are best educated in special classes. Not one of the teachers (approximately 25) indicated that the children learned more in regular classes.

The process of helping these special class students adjust to a mainstreamed program occurred against a background of resistence by the regular education staff. Discussions with the teachers during the year indicated that they tended <u>not</u> to view these children as their educational responsibility but as the responsibility of the learning center (special education) staff. As a result, the time the integrated students spent in

the regular class appeared not to be educationally useful to them, since there was little evidence of programming to the child's special educational needs. By contrast, the total effort of the special class teacher was oriented toward providing appropriate educational experiences to her class of students.

Observations and interviews with the learning center staff and the regular education teachers did indicate a greater pattern of acceptance of the mainstreamed students during the second year of this program.[2] The critical variables appeared to be the continued existence of the learning center, and learning center staff who communicated effectively with the regular education faculty, increasing recognition by the regular education staff that the learning center staff was generally available to help them with all their children, either by direct service or consultation. In our experience, this process does not happen without considerable effort expended by learning center staff with the regular class teachers and administrators. Thus, concomitantly with the special child's long-term process of adjustment and accomplishment within the mainstreamed setting, a parallel and equally active long-term process of staff acceptance, understanding, and willingness to adapt their programming to the needs of the special child must be pursued.

Finally, one methodological issue must be considered: the generalizeability of data obtained from one special class. As will be recalled, the integrated children attended several regular classes while the segregated sample attended one special class. Therefore, variance due to teacher or classroom effects could not be controlled or isolated. Inspection of the

means and standard deviations in Table 1 indicates that variability was comparable for integrated and special class students. Given that the variability between special classes is not greater than the within class variability, at least as it relates to cognitive variables (Smith, 1974), and that social interaction data are comparable in several special classes (Gampel, Gottlieb, & Harrison, 1974), the investigators do not anticipate that the single special class employed in this investigation seriously reduces the generalizeability of the findings, though clearly this will have to be tested in subsequent studies.

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[2]Systematic data during the second year of the program are available, but the sample sizes are very small. The positive impressions of the Learning Center program were so strong during this year that the principal and special education staff felt compelled to integrate all the special class controls. By February, only one or two students remained in the special class and these were integrated for substantial portions of the school day by April.